

CLAIMS

1. A *Lactobacillus fermentum* strain (LB-f strain), deposited at the CNCM (Paris, France) on March 27, 2003, under registration number I-
5 2998.
2. The LB-f strain according to claim 1, having at least the following phenotypic characters:
 - regular, non sporing, Gram-positive rod;
 - 10 - heterofermenting;
 - catalase negative;
 - L (+)-lactic acid-producing.
3. The LB-f strain according to claim 1 or 2, having a 16S rDNA
15 sequence comprising a nucleotide sequence selected from:
 - SEQ ID No. 1 ;
 - its complementary sequence ; and
 - sequences identical at least at 98.1% to SEQ ID No. 1 or to its complementary sequence.
- 20 4. The LB-f strain according to claim 3, wherein said sequences are identical at least at 98.5%, and preferably at least at 99% to SEQ ID No. 1 or to its complementary sequence.
- 25 5. The LB-f strain according to claim 4, wherein said sequences are identical at least at 99.5%, and preferably at least at 99.8% to SEQ ID No. 1 or to its complementary sequence.
- 30 6. A method for cultivating a *Lactobacillus fermentum* strain (LB-f strain) according any of claims 1 to 5, comprising at least:

- a) providing a culture medium containing at least lactose and yeast extract;
- b) cultivating said LB-f strain in said culture medium under fermenting conditions; and
- 5 c) recovering the thus obtained culture of the LB-f strain.

7. The method according to claim 6, wherein said culture medium contains lactose at a concentration range of about 50 to about 100 g/l.

- 10 8. The method according to claim 6 or 7, wherein said culture medium contains yeast extract at a concentration range of about 5 to about 20 g/l.

9. The method according to any of claims 6 to 8, wherein said fermenting conditions in step b) are pH-regulated, said pH ranging
15 between about 4.5 and 5.5.

10. The method according to any of claims 6 to 9, further comprising separating the biomass from the culture supernatant (LB-f-SCS) by centrifugating said culture of LB-f strain recovered in step c).

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11. The method according to claim 10, further comprising recovering said biomass and/or said LB-f-SCS.

12. A *Lactobacillus fermentum* culture supernatant (LB-f-SCS)
25 obtainable by a method according to claim 11.

13. A *Lactobacillus fermentum* strain (LB-f strain) according to any of claims 1 to 5, for use as a medicine.

30 14. The LB-f strain according to claim 13, wherein said medicine is used for preventing and/or treating gastrointestinal disorders.

15. The LB-f strain according to claim 14, wherein said gastrointestinal disorders are selected from ulcers and infections due to *Helicobacter pylori*, intestinal inflammatory diseases, such as ulcerous colitis, Crohn's disease and pouchitis, irritable bowel syndrome, steatohepatitis, hepatic steatosis, and infectious diarrhoea.
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16. A *Lactobacillus fermentum* culture supernatant (LB-f-SCS) according to claim 12, for use as a medicine.
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17. The LB-f-SCS according to claim 16, wherein said medicine is used for preventing and/or treating gastrointestinal disorders.
18. The LB-f-SCS according to claim 17, wherein said gastrointestinal disorders are selected from ulcers and infections due to *Helicobacter pylori*, intestinal inflammatory diseases, such as ulcerous colitis, Crohn's disease and pouchitis, irritable bowel syndrome, steatohepatitis, hepatic steatosis, and infectious diarrhoea.
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19. Use of a *Lactobacillus fermentum* strain (LB-f strain) according to any of claims 1 to 5, for the manufacture of a medicine for preventing and/or treating gastrointestinal disorders.
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20. Use of a *Lactobacillus fermentum* culture supernatant (LB-f-SCS) according to claim 12, for the manufacture of a medicine for preventing and/or treating gastrointestinal disorders.
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21. The use according to claim 19 or 20, wherein said gastrointestinal disorders are selected from ulcers and infections due to *Helicobacter pylori*, intestinal inflammatory diseases, such as ulcerous colitis, Crohn's
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disease and pouchitis, irritable bowel syndrome, steatohepatitis, hepatic steatosis, and infectious diarrhoea.

22. Use of a *Lactobacillus fermentum* strain (LB-f strain) according to
5 any of claims 1 to 5, as a dietary product.

23. Use of a *Lactobacillus fermentum* culture supernatant (LB-f-SCS) according to claim 12, as a dietary product.

10 24. A pharmaceutical composition comprising a *Lactobacillus fermentum* strain (LB-f strain) according to any of claims 1 to 5, and a pharmaceutically acceptable carrier.

25. The pharmaceutical composition according to claim 24, wherein
15 said LB-f strain is present in an amount from about 10^9 to about 10^{12} bacteria/g, preferably from about 10^9 to about 10^{11} bacteria/g, and more preferably from about 10^9 to about 10^{10} bacteria/g.

26. A pharmaceutical composition comprising a *Lactobacillus*
20 *fermentum* culture supernatant (LB-f-SCS) according to claim 12, and a pharmaceutically acceptable carrier.

27. The pharmaceutical composition according to claim 26, wherein
25 said LB-f-SCS is present in an amount of at least about 100 mg per gram of composition.

28. The pharmaceutical composition according to any of claims 24 to 27, wherein said composition is ingestible.

30 29. The pharmaceutical composition according to claim 28, wherein said composition is in a form selected from tablets, liquid bacterial

suspensions, dried oral supplements, wet oral supplements, dry tube feeding, wet tube feeding.

30. A dietary composition comprising a *Lactobacillus fermentum* strain
5 (LB-f strain) according to any of claims 1 to 5, and a food carrier.

31. The dietary composition according to claim 30, wherein said LB-f strain is present in an amount from about 10^5 to about 10^9 bacteria/g, preferably from about 10^6 to about 10^8 bacteria/g, and more preferably
10 from about 10^6 to about 10^7 bacteria/g.

32. A dietary composition comprising a *Lactobacillus fermentum* culture supernatant (LB-f-SCS) according to claim 12, and a food carrier.

15 33. The dietary composition according to claim 32, wherein said LB-f-SCS is present in an amount of less than about 100 mg per gram of composition.

34. The dietary composition according to any of claims 30 to 33,
20 wherein said dietary composition is ingestible.

35. The dietary composition according to claim 34, wherein said composition is selected from milk, yogurt, curd, cheese, fermented milks, fermented milk-based products, ice-creams, fermented cereal-based
25 product, milk-based powders, infant formulae.

36. A method for treating or preventing gastrointestinal disorders in a mammal, especially a human, in need of such treatment, said method comprising:

30 administering to said mammal a pharmaceutically effective amount of a medicine selected from the group of:

- a *Lactobacillus fermentum* strain (LB-f strain) according to any of claims 1 to 5; or
- a *Lactobacillus fermentum* culture supernatant (LB-f-SCS) according to claim 12; or
- 5 - a pharmaceutical composition according to any of claims 24 to 29.

37. The method according to claim 36, wherein said gastrointestinal disorders are selected from ulcers and infections due to *Helicobacter pylori*, intestinal inflammatory diseases, such as ulcerous colitis, Crohn's
10 disease and pouchitis, irritable bowel syndrome, steatohepatitis, hepatic steatosis, and infectious diarrhoea.

38. The method according to claim 36 or 37, wherein said medicine is administered orally.
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39. The method according to claim 38, wherein said medicine in a form selected from tablets, liquid bacterial suspensions, dried oral supplements, wet oral supplements, dry tube feeding, wet tube feeding.